

**Notice of Allowability**

Application No.

10/668,271

Examiner

Zia R. Hashmi

Applicant(s)

SILLARD ET AL.

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**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 9/24/2003.
2. ☒ The allowed claim(s) is/are 1-35.
3. ☒ The drawings filed on 24 September 2003 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All   b) ☐ Some\*   c) ☐ None   of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |  |
|--|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)   | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date <u>1/12/2/4/5/11/04</u> | 7. <input type="checkbox"/> Examiner's Amendment/Comment                               |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material                                       | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance   |
|  | 9. <input checked="" type="checkbox"/> Other <u>IDS of 9/24/03</u> .                   |

## DETAILED ACTION

### *Allowable Subject Matter*

1. A "Preliminary Amendment" was received on September 23, 2003. Specification and claims 1, 5, 7, 15, 17-19, 22, and 26 have been amended, as indicated, and new claims 29-35 have been added.

2. Claims 1-35 are allowed.

3. The following is an examiner's statement of reasons for allowance:

With respect to independent claims 1, 9, and 23, prior art fails to disclose a chromatic dispersion compensation module comprising, an enclosure including an input terminal and an output terminal, a higher-order mode (HOM) chromatic dispersion compensation optical line situated inside the enclosure and disposed between the input terminal and the output terminal, the line comprising one or more HOM multimode chromatic dispersion compensation optical fibers, in series and not comprising any single-mode optical fiber, an input mode converter for converting the fundamental mode into said higher order mode, situated between the input terminal and the compensation optical line, an output mode converter for converting said higher order mode into the fundamental mode, situated between the compensation optical line and the output terminal, the module being adapted to be inserted by means of the input and output terminals into a transmission line comprising a standard single-mode line optical fiber adapted to transmit information in a spectral domain of use, the input terminal and the input mode converter together introducing into the transmission line an input loss, the

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output terminal and the output mode converter together introducing into the transmission line an output loss.

4. With respect to independent claims 8, 16, 24, and 27, prior art fails to disclose an enclosure including an input terminal and an output terminal, a higher-order mode chromatic dispersion compensation optical line situated inside the enclosure and disposed between the input terminal and the output terminal, the line comprising one or more HOM multimode chromatic dispersion compensation optical fibers in series and not comprising any single-mode optical fiber, an input mode converter for converting the fundamental mode into said higher order mode, situated between the input terminal and the compensation optical line, an output mode converter for converting said higher order mode into the fundamental mode, situated between the compensation optical line and the output terminal, the module being adapted to be inserted by means of the input and output terminals into a transmission line comprising a standard single-mode line optical fiber adapted to transmit information in a spectral domain of use, and the compensation optical fiber or at least one of the compensation optical fibers in series having a core having at least five core segments, to which core cladding is added, so that said optical fiber having a core with at least five core segments simultaneously has, at a wavelength of 1550 nm, chromatic dispersion more negative than -300 ps/nm-km and a chromatic dispersion to dispersion slope ratio greater than 200 nm.

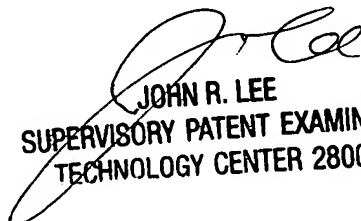
Claims 2-7, 10-15, 17-22, 25-26, and 28-35 are allowed by virtue of their dependencies on the independent claims 1, 8-9, 16, 23-24, and 27.

**Conclusion**

5. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments of Statement of Reasons for Allowance".
6. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact Electronic Business Center (EBC) at 866-217-9197 (toll-free).
7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zia Hashmi whose telephone number is (571) 272-2473. The examiner can normally be reached between 8.30 AM- 5 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Lee can be reached on (571) 272-2477.

Zia Hashmi

March 17, 2005.

  
JOHN R. LEE  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800